

## DETECTION OF *Campylobacter* spp. IN SELECTED FARMS AROUND SELANGOR.

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*Campylobacter* is considered as one of the emerging food and water borne zoonotic pathogens. This bacteria is a major cause of food borne diarrhoeal illness in humans. The bacteria normally inhabit the intestinal tract of warm-blooded animals and it has been isolated from various species of animals and animal origin food products. Most of the studies on detection and characterization of *Campylobacter* have been carried out in developed countries whereas such data is lacking in developing countries like Malaysia. With this scenario in view, this study was carried out to isolate *Campylobacter* spp. from several goats' farms around Selangor. The objective of this study was to determine the prevalence and occurrence of *Campylobacter* species from the rectum of the goat

Sixty goats were randomly selected from three different goat farms located at Hulu Langat, Bangi and TPU (Taman Pertanian Universiti), Selangor. Rectal swabs were collected to detect the presence of *Campylobacter* spp. The rectal swab was placed in a Cary Blair transport medium (oxid) for detection of *Campylobacter* spp. Cool box with ice was used in order to transport the samples to the Veterinary Public Health Laboratory, Universiti Putra Malaysia.

Rectal swab was inoculated directly onto the *Campylobacter* Blood-Free Selective Agar base (CM739; Oxoid) supplemented with CCDA (Charcoal-Cefoperazone-Deoxycholate agar), *Campylobacter* Selective Supplement (SR155; Oxoid), cefoperazone 32 µg ml<sup>-1</sup> and amphotericin B 10 µg ml<sup>-1</sup>. The plates were then incubated at 42°C for 48 hours under microaerophilic conditions by the use of an anaerobic jar containing a gas generating pack (oxid; 5% O<sub>2</sub>, 10% CO<sub>2</sub>, 85% N<sub>2</sub>). The positive growth plate had round, raised and convex colonies. The colonies had a tendency to spread along the streak lines. Each suspected colony was then subjected to gram staining and these bacteria had appeared as gram negative, spiral rods. These presumptive colonies were subcultured on Colombia blood agar with 5% defibrinated horse blood. These plates were then incubated at 37°C for 48 hours in order to get the pure culture. Wet mount and gram staining were repeated on each suspected pure colony from the Colombia blood agar before proceeding to the biochemical tests. The biochemical tests carried were that of oxidase, catalase, Hippurate hydrolysis, Indoxyl acetate hydrolysis and urease. The entire biochemical tests were all positive.

Out of 60 goats, 9 (15.0%) goats were positives for *Campylobacter* spp. Out of the nine isolates, 5 (55.6%) were *C. jejuni* and 4 (44.6%) were *C. coli*. The present result indicated that the occurrence of *Campylobacter* in goat as low, however these results are also compatible with other studies done in other countries (Salihu *et al.*, 2009). This low detection of the limited *Campylobacter* spp. might be due to failure or error occurring during the procedure of the isolation of the organism. Apart from that, the low detection could also be due to the use of CampyGen gas generating system is only suitable for growth of thermophilic *Campylobacters* while for non-thermophilic *Campylobacters* such as *C. sputorum*, *C. consisus*, *C. mucosalis*, *C. hyointestinalis*, the growth are suppressed as this system does not create hydrogen-enriched atmosphere which is important for detection of these types of

*Campylobacter*. Other than that, *Campylobacter* also have the ability to enter into viable but non culturable state where in this state, the pathogen response to survival stress by not being cultured on laboratory media (Bhavsar, S. P., *et al.*, 2007). Another possibility that affected the detection of *Campylobacter* spp. could be due to the use of Modified CCDA agar which contains cefoperazone as the selective supplement and this does not favour growth of some *Campylobacter* spp.. In one study done by Aspinall *et al.*, (1993), mCCD agar was designed for use at 37°C in order to isolate *C. upsaliensis* as well as other thermophilic campylobacters. However, the result showed that *C. upsaliensis* was resistant to cefoperazone,

The present study indicated that the occurrence of *Campylobacter* spp. in goats was 15% from selected goat farms in Selangor. This result showed that there was a low occurrence of the organisms in goats; however the present study results are similar with the studies done worldwide. Further studies need to be done to get the actual prevalence of *Campylobacter* spp.

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- 3) Salihu, M.D., Junaidu, A. U., Oboegbulem, S. I., Egwu, G. O., Tambuwal, F. M., and Yakuba, Y. (2009). Prevalence of *Campylobacter* species in apparently healthy goats in Sokoto state (Northwestern) Nigeria. *Afr. J. Microbiol. Res.*, **3**(9): 572-574.